Conservation of Endangered, Threatened, and Nongame Birds Performance Report, 1 July 2003 to 30 June 2004

by Sumner W. Matteson

SUMMARY

The Wisconsin Department of Natural Resources continued the endangered, threatened, and nongame birds' conservation program.

Nesting surveys were conducted for the Red-necked Grebe, Great Egret, Red-shouldered Hawk, Osprey, Bald Eagle, Greater Prairie Chicken, Piping Plover, Common Tern, Forster's Tern, and Caspian Tern. Results of the surveys, not necessarily representative of complete coverage for each species, are presented.

Forster's Tern nesting platforms were installed on Lake Puckaway in Marquette County. Habitat management for nesting Forster's and Common Terns occurred on Lake Butte des Morts, for Forster's Terns on Lake Puckaway, and for Common Terns on Lake Superior and Lake Butte des Morts.

The State of Wisconsin with over 150 partners continued development of the Wisconsin Bird Conservation Initiative, which aims to provide a full spectrum of bird conservation in the state through game and nongame bird projects.

The Whooping Crane Eastern Partnership involving the WDNR, the International Crane Foundation, U.S. Fish and Wildlife Service, Operation Migration, and several private organizations is proceeding on schedule with plans to establish a second breeding and migratory flock of Whooping Cranes in the United States.

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Study 215: Conservation of Endangered, Threatened and Nongame Birds

Performance Report
1 July 2003 to June 2004

Contents

JOB 215.1: RECOVERY PLANNING

No funds were allocated for this job. Recovery plans have been completed for Bald Eagle, Osprey, Peregrine Falcon, Common Tern, Forster's Tern, Caspian Tern, Cerulean Warbler, Yellow-Crowned Night Heron, Barn Owl, Trumpeter Swan, Loggerhead Shrike, and Red-necked Grebe.

JOB 215.2: STATEWIDE INVENTORY

Red-necked Grebe *Podiceps grisegena* (endangered)

The official state status of this species was changed in 1997 from threatened to endangered. The only reported nesting areas in 2004: Grassy Lake (Columbia County), Phantom Lake Flowage (Crex Meadows Wildlife Area, Burnett County), and White Lake (Waupaca County). No nesting Red-necked Grebes were observed at Rush Lake for the first time since 1980, though high water may have affected nesting attempts (Tom Ziebell pers. comm.).

Observers reported only 13 adults and 2 young at 5 sites (6 sites if two different locations at Horicon Marsh are included) during the 2004 breeding season. By comparison, in 2003 there were 23 adults counted at 4 sites, 38 adults counted at 3 sites in 2002, 32 adults at 2 sites in 2001, and 18 birds observed at 3 sites in 2000. Presence/absence of birds is summarized below.

Rush Lake (Winnebago County; T17N, R14E, S14, 23, 26, 27) –Thomas Ziebell (pers. comm.) observed the following on 20 June 2004 at Rush Lake: "Heavy rains several weeks before survey. Water level $3^{1/2}$ feet above usual summer water level…. Acre size to small clumps of cattail islands floating around the lake. Tops of Scirpus only $1\text{-}1^{1/2}$ feet above the water. Lots of carp." The previous year he noted that the water levels were only about 4 inches high on 14 June 2003 and "lots of carp!" This compares to "normal" water levels for 17 June 2002, and "high" levels observed on 17 June 2001.

Ziebell observed only 4 adults (and no nests nor young) at Rush Lake on 20 June 2004. In 2003, he documented 14 adults and 3 active nests on 14 June. On 17 June 2002, he reported 32 adults (including 1 pair with 2 young, 1 adult with 1 young, and 17 adults not associated with nests at 9 different sites on the lake), and 11 nests with eggs. In 2001, he found 2 nests with eggs, 2 separate families with 1 young each, and another 12 separate pairs; he counted a total of 28 adults on the lake in 2001. In 2000, he documented 16 adults and 7 nests with eggs (compared to 1 nest containing 1 egg in 1999; 9 nests in 1998 with 20 eggs).

Phantom Flowage (Crex Meadows Wildlife Area**,** Burnett County; T38N, R18W, S06) – Jim Hoefler (pers. comm.) observed 2 pairs during the breeding season on Phantom Flowage in 2004, with 1 adult and 1 young observed on 12 September 2004, and 2 young observed by Andy Paulios (pers. comm.) on 15 September 2004. In 2003, Hoefler observed 2 pairs but no young. And he observed 2 pairs and no young on Phantom throughout the summer of 2002. In 2001, he recorded 2 pairs at the south end of Phantom Lake in early summer, with one of these pairs feeding 2 young on 9 August 2001.

Hanten Pond (St. Croix County; T31N, R17W, S04 SE; S09) – No nesting has occurred here since 1988.

Bierbauer Lake (St. Croix County; T31N, R17W, S04 NW; S05 NE) – No surveys occurred at this site in 2004.

Oakridge Lake (St. Croix County; T31N, R17W, S08, 09) – Kris Belling (pers. comm.) and associates did not conduct surveys here in 2004 and 2003, and they did not see any Red-necked Grebes here in 2002. They were not able to conduct surveys here during 2001. In 2000, one lone adult was sighted on the lake, which at the time constituted the first time in 5 years that any Red-necked Grebes had been observed on the lake.

Old Elk Lake (Dunn County; T27N, S09) –This site was not surveyed during the reporting period.

Grassy Lake (Columbia County; T11N, R11E) – Dave Shealer (pers.comm) reported a pair of nesting Red-necked Grebes, but apparently the nest failed ("no sign of chicks"), with the adults disappearing by mid-June 2004. In 2003, he observed a pair with 2 chicks about a week old in late June. A pair also nested here in 2002.

Harvey and County DM Pond (Columbia County) – No birds have nested here since 1998.

Lake Barney (Dane County; T09N, R09E, S34 SE) **–** No birds have been observed here since 1998.

Waunakee Wetland (Dane County; T09N, R08E, S35) – Jim Stephenson (pers. comm.) did not report any birds on this 40- acre site during the reporting period.

Rowe Marsh (Columbia County; T11N, R10E, S16W) – This site has errantly reported as “Rose” Marsh in previous reports. No reports were received about this site during the reporting period nor in 2004.

Bong Recreation Area (Kenosha County; T02N, R20E, S15, 22) – There were no birds sighted here in 2004, nor during 2001-2003 (Jim Jackley pers. comm.).

Lake Mariah (Green Lake County; T14N, R20E, S25, SENE and S30, SWNW) – Sam Robbins (pers. comm.) observed 1 adult on 14 July 1998, but there have been no reports since then.

Patrick's Lake (Dane County; T09N, R07E, S34) – This site was not visited in 2004 nor during 2001-2003.

Horicon Marsh National Wildlife Refuge (Dodge County, T13 N, R15E, S12 NE1/4) – Bio-technician Jon Krapfl (pers. comm.) reported that 2 pairs of Red-necked Grebes occurred on the refuge during spring/summer 2004. One pair frequented "Stoney Pool" (T13N R15E S12) near the north end, and the other occurred at "I-9" flowage (T12N R16E S4) in the south. No reports of Red-necked Grebes were received in 2003. Aaron Holschbach (pers. comm.) reported that he observed an active nest (1 breeding pair) near Old Marsh Road on 17 June 2002. No further details were provided.

White Lake (Waupaca County; T22N, R13E, S21) – Steven Hoffman (pers. comm.) observed 1 adult and 1 juvenile here on 17 August 2004. In 2003, he reported that DNR wardens Ken Thomson and Jeff Knorr observed 3 birds–an adult and two juveniles on 1 September 2003. Hoffman and Paul Samerdyke observed "what looked like a juvenile red-necked grebe in about the same location" on 4 September 2003.

Great Egret *Casmerodius albus* (threatened)

In 2004, nesting Great Egrets occurred at 10 known sites: Rush Lake, Millers Bay (Lake Winnebago), Lake Puckaway, Green Island, Cat Island, Lone Tree Island (all three islands in Green Bay), Horicon National Wildlife Refuge, and Smith Slough, Blackhawk, and Mertes Slough on the Mississippi River. A total of 304-307 nests were documented at 6 of these sites--all except the Mississippi River sites and Green Island.

Great Egrets were known to nest at 6 sites in 2003: Millers Bay, Lake Puckaway, Green Island and Cat Islands, and Smith Slough and Mertes Slough. A total of 188 nests were documented at two eastern WI sites; at Green Island no count of nests or adults occurred but nesting did occur (Tom Erdman pers. comm.); 171 adults were recorded at the two Mississippi River sites.

Results are presented below.

Millers Bay (Oshkosh, Lake Winnebago, Winnebago County; T18N, R17E, S16) **–** Tom Ziebell (pers. comm.) observed 216 nests in black locust, cottonwood, and box elder on 28 May 2004 at a riprapped artificial island whose interior serves as a water treatment basin for the City of Oshkosh. In 2003, Ziebell reported 167 nests here on 13 June 2003. In 2002, he observed 175 nests at the site. In 2001, he found 160 Great Egret nests here (compared to 178 nests in 2000, 55 nests in 1999, and 2 nests in 1998).

Rush Lake (Winnebago County; T17N, R14E, S12 SW1/4) – Tom Ziebell (pers. comm.) observed 2 Great Egret nests in a mixed rookery of Great Blue Heron and egrets on 6 June 2004. He did not observe nesting egrets on Rush Lake in 2003. In 2002, he reported 2 nests in a mixed colony of Great Blue Herons (4 nests) and Great Egrets. The colony was observed in "mature trees" on 11 May 2002.

Pancake Island, Lake Puckaway (Green Lake County, T15N, R11E, S27 NENE) - I counted 57 Great Egret nests with 15 Great Blue Heron nests in a fairly dense stand of willow (*Salix* sp).and snags on 3 May 2004. Great Egrets also nested here in 2003 (Daryl Christensen).

Long Point Island (Lake Winnebago, Winnebago County; T17N, R17E, S34) – Tom Ziebell (pers. comm.) did not visit the island in 2003 and 2004. He observed at least 12 Great Egret nests in the central portion of the eastern end of the island in June 2002. It was a mixed colony of egrets and Black-crowned Night-Herons. He heard "many young."

Horicon Marsh NWR (Dodge County, T14N, R16E, S31) - Great Egrets have nested on the refuge in recent years but have not been reported in PR reports until now. For the past 3 years, 2002-2004, Great Egrets have occupied a colony site north of Highway 49 in what is known as the "Radke Pool." No nest count occurred by refuge staff in 2002 and 2003. In 2004, refuge biologist Wendy Wychuk and volunteer Dave Shealer estimated that 7 nesting pairs occurred at Radke Pool. Refuge staff also conduct waterfowl surveys from ice-out to ice onset and have recorded the following peak numbers of Great Egrets: 116 on 2 August 2001; 119 on 12 August 2002; 454 on 11 September 2003. The origins of these birds are unknown.

Four-mile Island (Horicon Marsh WLA, Dodge County; T1N, R15E, S19 SE1/4) – Bill Volkert (pers. comm.) reported no Great Egrets nesting here during 2002-2004. Great Egrets have not nested here since 1994, when a mixed colony of Great Egrets (121 Great Egrerts), Double-crested Cormorants (*Phalacrocorax auritus*) (406 nests), and Great Blue Herons (*Ardea herodias*) (337 nests) totaled 864 nests.

Cotton Island (Horican Marsh WLA, Dodge County; T12N, R16E) – Bill Volkert (pers. comm.) reported no egret nesting during the reporting period nor during 2002-2003. Egrets nested here in 1997 and 1998, but not during 1999-2001. In 1998, a mixed colony of 500 nests of Great Blue Herons, Great Egrets, and Double-crested Cormorants suffered irreparable damage when a severe storm toppled most nest trees on 31 May. Production was 0 that year.

Brushwood Island (Fox Lake, Dodge County; T13N, R13, S23, NE1/4) – Maureen Rowe (pers. comm.) observed 2 nests here in 1997 but no nests in 1998 and 1999. No nesting birds were observed here during 2000-2004 (B. Volkert pers. comm.).

Eldorado Marsh (Fond du County; T16N, R21E, S33) – We have received no reports of egrets nesting here since 1997, when a mixed colony of 40 Great Blue Herons and Great Egrets occurred here.

Cat Island (Brown County; T24N, R25E, R21E, S07) – Tom Erdman (pers. comm.) found 19 nests, with 6 on the ground and the remainder in box elder. Many of these nests had at least 1 dead young, apparently due to a cold, wet spring. Erdman (pers. comm.) observed 21 Great Egret nests here in 2003, with 18 in box elder and 3 on the ground. He noted that there were at least 3 young per nest produced. He documented 18 nests here during 2002, with 3 on the ground. Production in 2002 averaged 3-4 young/nest. About 17 nests occurred here in 2001, according to Erdman, including 2 ground nests. He reported 20 nests (18 in box elder, 2 on the ground) in 1999. In 1998, he observed 6 nests (3 nests with 3 young/ nest, 3 nests with 4 young/nest) in box elder.

Lone Tree Island (Brown County) - Tom Erdman reported that 3-6 nests occurred in box elder on the island in 2004. Erdman estimated that "maybe 50 young fledged" from Lone Tree and Cat islands combined in 2004.

Green Island (Door County; T30N, R25E, S19-20) – Tom Erdman (pers. comm.) reported that Great Egrets nested here in 2003 and 2004 but did not land to survey the island. He reported a growing colony of 20-30 nesting pairs here in 2002. Great Egrets were also present in 2000 and 2001, but details were not submitted. He observed at least 23 nests on 12 July 1999 in balsam fir and aspen, with 3-4 young in each nest. In 1998, he found about 19 nests, with 3-5 eggs each, in balsam fir and white spruce.

Nelson-Trevino Bottoms, Mertes Slough, and **Whittman Bottoms** (Buffalo County) – Eric Nelson (pers. comm.) reported that egrets were not present at Nelson-Trevino Bottoms (Hershey Slough; T22N, R14W, S2 NWSE; River Mile 761.9, Pool 4) and Whittman Bottoms (T20N, R12W, S34 NWSE; River Mile 737.6, Pool 5A) in 2004 and 2003, nor during 1997-2002. At Mertes Slough (formerly known as St. Mary's Bottoms; 19N, R11W, S34, S1/2; River Mile 726.6, Pool 6), Nelson reported that nesting egrets were present in 2004 but has not had time to summarize his data. In 2003, he reported (pers. comm.) that 38 adults were present (from an aerial photo) on 25 April 2003, but did not know how many active nests were present.

In 2002, 54 birds were counted from an aerial photo taken on 29 April; no count of nests occurred. In 2001, 61 adults were present at Mertes Slough, but again no count of nests occurred.

Blackhawk, Lansing Dike, Smith Slough, Ambrough Slough, Dago Slough, and **Rosebrook Island** (Vernon, Grant, and Crawford counties) – In 2004, Great Egrets nested (data unavailable) at what is known as the Blackhawk Colony (River Mile 669), south of Blackhawk Park in Vernon County; this site had been inactive since 2000 (Eric Nelson pers. comm.). Three Great Egret nests were counted here on 9 April 2000. This site was not surveyed in 1999, but was known to be an active in 1998. No Great Egrets were observed at Lansing Dike in 2003, nor during 1997-2002 (Eric Nelson pers. comm.). Great Egrets also nested at Smith Slough in 2004, but data are unavailable. In 2003, Nelson noted that 133 adults were present (in an aerial photo) on 25 April 2003, with at least 20 nests observed from the ground. Vickie Hirschboeck (pers. comm.) reported that 9 nests were counted at Smith Slough in 2002, with 1.46 young/nest recorded on 8 July 2002. In 2001, 139 adults were counted at Smith Slough, but no count of nests occurred. There were 124 nests in silver maple and eastern cottonwood here in 1999 (Eric Nelson, pers. comm.). Sites at Ambrough Slough, Dago Slough, and Rosebrook Island have been abandoned, according to Nelson.

Red-shouldered Hawk *Buteo lineatus* (threatened)

John and Eugene Jacobs (pers. comm.) continued their long-term Red-shouldered Hawk breeding ecology study in three areas: the Nicolet National Forest (NNF), northeastern Wisconsin counties (Door, Brown, Oconto, and Marinette), and central Wisconsin (Wood and Portage counties). Their research is summarized in the table below. Generally, they found that the number of active nests was lower than the previous year, with reproduction "slightly better" overall but lower in central Wisconsin. In central Wisconsin, 15 of 20 historic nests were occupied, with 13 of 18 sites used in 2003 occupied in 2004. In the Nicolet National Forest, 6 of 20 previous year's nests were re-occupied, and another ten were 400 m or less of the 2003 nest site.

NNF= Nicolet National Forest, S & E of NNF= northeastern Wisconsin east and south of Nicolet National Forest, CEN WI= Central Wisconsin, Portage and Wood counties

Table 1. *Red-shouldered hawk reproduction 2004.*

	NNF	S. & E. of NNF	CEN WI	TOTAL
# of RS Sites Checked	58	33	26	117
# Occupied Sites	28	11	17	56
# of Active Nests Found	19	11	11	41
# of Nests Successful	7	7	6	20
% of Nests Successful	37%	64%	55%	49%
# of Young Fledged	15	12	12	39
YG/Active Nest	**0.79**	**1.09**	**1.09**	**0.95**
YG/Successful Nest (Brood Size)	2.14	1.71	2.00	1.95

John and Eugene checked 115 sites in 2002 (57 in the NNF, 27 south and east of the NNF, 31 in central Wisconsin) and found 48 active nests (18 in NNF, 13 south and east of the NNF, 17 in central Wisconsin), with 22 (46%) of these nests successful. A total of 56 young fledged (1.16 young/active nest and 2.54 young/successful nest) in 2002.

In 2001, they found112 sites (53 in the NNF, 26 south and east of the national forest, 33 in central Wisconsin) and found 53 active nests (14 in NNF, 16 south and east of NNF, and 25 in central WI) in 2001, with 30 of these successful (57%). A total of 66 young fledged (2.20 young/successful nest; 1.26 young/active nest).

Greater Prairie Chicken *Tympanuchus cupido pinnatus* (threatened)

The WDNR Bureau of Wildlife Management continued to coordinate the annual statewide census of booming grounds. Keir (2004) provided the following summary: "There was an [*sic*] 6% rangewide increase in male prairie chickens on booming grounds in central Wisconsin in spring of 2004 compared to the previous year. This increase follows an 8% population increase one year ago. A total of 597 male prairie chickens were observed in April, 2004 compared to 564 for the same areas in 2003…. it is extremely important to note that this increase occurred within the heart of the range (on Buena Vista, Leola and Paul Olson) **only** and "fringe" populations continue to fare poorly. Much of the range in central Wisconsin has lost booming grounds in recent years or the numbers have dramatically declined. Within the past 12 years all booming grounds in Taylor County (north) have been lost. The single ground at the Mosinee airport (east) is gone; so too is the one ground that existed for years east of Neillsville along Hwy 73 (west). The booming ground annually found at the Searles cranberry marsh (also west) was absent for the 3rd consecutive year in 2004. The booming ground(s) at Dewey Marsh (also east) was not present in 2004 and was considered very unstable last year. In addition to this, there was a decline of 20% in booming males in the outlying range (north) – also, a 25% decline in number of booming grounds! **This continued decline has become critical to the welfare of the entire population!**"

The number of cocks recorded for the years 1997- 2004 (Jim Keir pers. comm.) is presented below.

	1997	1998	1999	2000	2001	2002	2003	2004
Buena Vista Marsh	334	327	341	323	252	226	269	278
Leola	97	70	89	88	69	38	34	37
Paul Olson	100	129	139	194	174	176	183	199
Mead Wildlife Area	59	86	90	94	69	48	49	62
McMillan Wildlife Area	9	14	14	14	5	7	9	5
Outlying Area (incl. Searles Cranberry Marsh, Wood Co.)	22	30	26	36	17	27	20	16
Total:	621	656	699	749	586	522	564	597

Piping Plover *Charadrius melodus* (endangered)

On 3 June 2004, I observed a pair of Piping Plovers exhibiting courtship and territorial behaviors on Long Island in the Apostle Islands. One adult was banded on the left leg (green over silver) and a second adult was banded on the right leg (green? over silver). On 8 June 2004, National Park Service (NPS) technician Kerry Kindt and I observed the same pair and two plover scrapes but no eggs or evidence of any eggshells, in the same area where the birds had been observed on 3 June. On 16 June 2004, NPS Ecologist Julie Van Stappen observed 2 Piping Plover with leg bands (one with red over silver on the left leg) but no nest, in the same area where previous sightings had occurred. She also observed a third Piping Plover but could not determine if that bird was banded. By July 8 2004, all plovers had departed the Long Island area and I did not observe them elsewhere on the Long Island/Chequamegon Point peninsula.

In 2003 (9 June), Julie Van Stappen, NPS technician Julie Kroll, FWS biologist Joel Trick, and I surveyed potential breeding habitat at the northern end of Long Island (Chequamegon Bay, Lake Superior). We observed no plovers here. Visiting the traditional breeding area at southeastern Long Island, we observed a pair of Piping Plovers close to the same site where a pair had nested in 2002. One of the adults was banded on the right leg with the following sequence: orange band above black band above silver band. This bird was a pre-2002 fledgling from Michigan's Wilderness State Park. I observed a total of 3 individual Piping Plovers during the survey, but did not see more than two together at one time during the survey. We observed the pair engaged in territorial behavior. Also observed at this time were fresh turkey, raccoon, coyote, and fox tracks.

On 17 June 2003, I located at the south end of Long Island the same banded adult observed the prior week, and for the next 1.5 hr observed territorial and courtship behaviors involving the banded adult and an unmarked bird. I watched and heard the unbanded plover calling "mournfully" while flying in looping circles in and around the potential breeding territory: classic courtship flight displays (Jennifer Stucker pers. comm.) At one point the unbanded plover charged the banded adult, with the banded bird assuming a submissive posture. On another occasion, the unbanded plover flew close to the banded bird and both vocalized. I did not witness copulatory behaviors, however.

On 18 June 2003, AINL research staff Kerry Kindt, Heather, Quint, and Sarah McKinney posted signs warning the public to keep out of the nesting area. The signs were posted along the northern and southern boundaries of the breeding territory where Piping Plovers had been observed the previous day and on 9 June, and signs were also posted along the central lakeside edge of the territory. On 1 July 2003, I returned to the area on Long Island where we had observed the plovers. I spent 4 hours walking and watching the lake dune and beach area, and traversing the shoreline along a 2 km area that included the bay and lake sides of the peninsula. At no time did I observe the plovers. There was no sign of predation and no known cause for the disappearance of the plovers.

On 5 June 2002, I observed 2 pairs about 1 km apart on southeast Long Island in an area traditionally occupied by breeding Piping Plovers. I observed the making of dummy scrapes by 1 pair and found no eggs. On 12 June 2002, I returned with National Park Service intern Julie Kroll and observed 2 pairs of Piping Plovers at the same sites as observed a week earlier on southeast Long Island. One of these pairs was banded, with both adults banded on the right leg, orange band above black band above silver FWS aluminum band; the second pair was not banded. The banded pair (Michigan origin) nested; the nest scrape—20 m from the dune edge and 60 m from the water's edge—contained 4 eggs.

On 18 June 2002, National Park Service Ecologist Julie Van Stappen and assistants installed a predator exclosure around the nest. A no-entry zone of a quarter mile was established around the nest. On 2 July 2002, Van Stappen checked the plover nest and found no eggs, with no sign of egg shells and no indication that the exclosure had been disturbed. They observed no young anywhere and assumed predation had occurred.

At Seagull Bar on Lake Michigan, where Piping Plovers had nested in 2001, no Piping Plovers nested in 2002. One migrant Piping Plover was observed at Seagull Bar on Lake Michigan by DNR wildlife manager John Huff (pers. comm.), 6 May 2002.

In 2001, 2 pairs of Piping Plovers nested in Wisconsin, including the one at Seagull Bar on Lake Michigan, which represented the first time in over 50 years this species nested along the Wisconsin shore of Lake Michigan. Breeding plovers returned to Long Island on Chequamegon Bay, Lake Superior, as they had in 1998 and 1999. At least one of the Long Island breeding adults was the same bird from a pair of Michigan origin that nested on the island in 1998 and 1999. Details of the 2001 breeding are presented below.

On 16 May 2001, Julie Van Stappen (pers. comm.), Ecologist, National Park Service (NPS), reported 2 adults observed on southeast Long Island. Two birds were observed the following day in the same area. On 5 June, Van Stappen, NPS intern Heather Quint, and I found a Piping Plover nest with 4 eggs on southeast Long Island (GPS coordinates recorded but not presented here.) The nest was 55.8 m from the lake water's edge and 14.2 m from the dune edge. NPS personnel installed a nest exclosure on 6 June. Julie reported 2 adults with 3 young on 9 July. On 11 July, Jennifer Stucker and Liz Price from the University of Minnesota joined NPS's Jeff Soltesz and me to capture and band all 3 plover young. All 5 birds were observed again on 27 July 2001, and the young are believed to have fledged.

On 11 June 2001, BER Natural Areas Management Specialist Randy Hoffman observed a pair of Piping Plover adults at the east end of Seagull Bar on Lake Michigan. A single adult was reported by volunteer observer Jerry Smith on 13 June. On 20 June, DNR wildlife manager John Huff and I found a Piping Plover nest scrape with 4 eggs on a sand ridge adjacent to a cattail marsh. The nest was ca. 150 m west of the eastern lake edge and ca. 120 m north of the

southern lake edge; also ca. 275 m northwest of the southeast tip of Seagull Bar. On 22 June, Huff installed signs along the outer area of the site restricting access to authorized personnel only. On 25 June, Jennifer Stucker, Huff, and others installed a predator exclosure at the site. On 2 July, all 4 eggs were found scattered at varying distances from the nest with puncture marks. The eggs were salvaged and found to be near hatching when predated.

Common Tern *Sterna hirundo* (endangered)

In 2004, Common Terns colonized 5 sites in 2004--one less than in 2003, and with no Common Terns nesting in lower Green Bay for the fifth year in a row. No terns nested on Washington Island in 2004 (Tom Erdman pers. comm.) The number of known nesting pairs remained low (311) but stable statewide compared to 2003 (309), 2002 (340), and 2001 (317).

The number of known colony sites observed in June 2003 increased from 3 to 6 (after having dropped from 5 in 2001 to 3 in 2002). An intriguing late-season report of a 2003 colony off Washington Island came from Mr. Erdman and represents a location not reported previously. Also, based on a late July report from long-time Endangered Resources volunteer Daryl Christensen, a small colony (ca. 2-3 pairs) likely occurred on Lake Puckaway in 2003. The number of nesting pairs (not including likely re-nests) increased 6-21% in 2003: 361-411 compared to 340 in 2002. But excluding the Washington Island and Lake Puckaway sites, there was a decrease of 9.1% in the number of nests actually counted, from 340 to 309 in 2003.

Lake Superior colonies continue to comprise the distinct majority (97%) of the state's breeding population. The largest colony (204 nesting pairs) occurred at Interstate Island in the Duluth-Superior Harbor. Colony locations and number of young produced (if known) are presented below.

Ashland Pier (also called "Tern Island"), Lake Superior (Ashland County; T48N, R04W, S28) - Fred Strand (pers. comm.) reported a peak nest count of 99 nests on 16 June 2004. He documented 91 nests on 17 June 2003; observed 85 nests here on 17 June 2002 and 75 nests on 12 June 2001. The island site, newly rebuilt during fall 2002, experienced disastrous mink predation in early June 2004, with all 193 young assumed dead (144 known dead) by mid-June. In 2003, some mink predation occurred between 28 July and 1 August, with at least 21 young missing. But at least 183 young fledged (2.01 yng/nest) in 2003 from the site. This was in stark contrast to 2002, when mink predation took a heavy toll. By 2 July 2002, mink had killed 100 chicks, with 40 previously banded chicks missing; an additional 13 chicks were found dead, not predated. An additional 12 chicks were predated by mink on 22 August 2002. At least 6 mink were trapped and removed during the 2002 breeding season., and terns re-nested on the island. In total, at least 165 chicks died as a result of mink presence on the island in 2002. Despite these losses, as many as 56 young may have fledged in 2002.

In 2001, production was very good, aided by successful mink-trapping efforts. The total number of chicks banded was 202, with 139 young fledged (1.85 young/nest, the same rate as in 2000 when 120 young fledged from 65 nests).

Interstate Island, Duluth-Superior Harbor; Lake Superior (Douglas County/St. Louis County; T49N, R14 W, S19, N1 / 2NENW) - Fred Strand (pers. comm.) reported a peak nest count of 204 nests on 18 June 2004, with at least 201 young fledged (0.99 young/nest) and 387 banded by summer's end. In 2003, Strand documented 191 nests on 16 June 2003; he reported that at least 139 young fledged and 443 young were banded. In 2002, he recorded a peak of 195

nests (on 21 June) and 136 chicks fledged (0.70 young/nest), with 330 chicks banded. Mink predation apparently struck in late July and killed as many as 41 young in 2002.

In 2001, Strand reported 199 nests on 12 June 2001, a slight increase over the 188 nests documented in 2000 but lower than the 216 nests documented in 1998. The total number of chicks banded was 349, with 141 young fledged (0.71 young/nest), less productivity than the previous year when the number of fledged young was 202 (1.07 young/ nest).

Kidney Island, Green Bay (Brown County; T24, R21, S19) - Tom Erdman (pers. comm.) reported that no terns nested here during 2001-2004.

Pensaukee Dredge Spoil Island, Green Bay (Oconto County; T27 N, R21E) - Tom Erdman (pers. comm.) observed no nesting terns here during 2000-2004. In 1999, he reported only 12 nests (compared to 26 nests in 1998). No young survived to fledging in 1999 due to unidentified mammalian predation.

Bare Island (also known as White's Island), Lake Butte des Morts (Winnebago County; T19N, R19N, S36, NW) - On 1 June 2004, DNR wildlife biologist Art Techlow and I found 2 depredated nests with eggshell fragments; we also found 4 empty scrapes. This site failed. In 2003, we counted 22 nests here on a gravel substrate on 2 June 2003, but mink predation apparently wiped out the colony later in June (Art Techlow pers. comm.). The colony site was abandoned when we visited on 1 July 2003. We found 2 abandoned 1-egg clutches.

No terns nested here in 2002. On 8 June 2001, volunteer Daryl Christensen and I documented 14 nests with eggs on a gravel substrate. No terns nested here in 2000. In 1999, Common Terns did not nest on the island, completely abandoning the site, perhaps due to the presence of a newly conducted breakwall that lay within 50 m of the island. The 2001 colony, however, was washed out by a severe storm that hit the area on 11 June. These terns attempted to re-nest 200-250 m northwest of the island on the Terrell's Island breakwall. Here, Art Techlow and I observed 22 nests with eggs on 3 July 2001. On 18 July 2001, Techlow observed Common Terns diving at a mink at this site. The colony failed.

Sand Island #4, (inside) Terrell's Island Breakwall, **Lake Butte des Morts** (Winnebago County; T19 R15E, S35 NWSE) - This dredge spoil island (N44^0 04'49.4", W088^0 39'46.1") lies ca. 300 m west of Bare Island. Common Terns did not nest here in 2004 and 2003. Art Techlow and I observed 10 Common Tern nests here on 30 May 2002, and 60 nests on 26 June 2002. On 16 July 2002, we returned to the island to band young but found only 1 young to band and observed 5 newly fledged young. Many nests had been abandoned with full clutches of eggs. 2002 was the first year birds nested here.

Sand Island #1, (inside) Terrell's Island Breakwall, **Lake Butte des Morts** (Winnebago County; T19 R15E, S35, NWSE) - Art Techlow and I documented 5 nests on 1 June 2004. Techlow (pers. comm.) re-visited the site on 15 June 2004 and found that high water had inundated some tern (including Forster's Tern, see below) nests and threatened others. On 8 July 2004 he returned again to the colony site and and found the island overgrown with dense smartweed growth and nests trampled by Canada geese. The site failed. Terns nested here for the first time in early July 2003, most likely re-nests from the failed Bare Island site. Art Techlow and I counted 3 nests with eggs on 3 July 2003, with nests composed of wood chips, *Salix* stems, and dry Canada Goose fecal matter.

Willow Tree Island, Lake Winnebago (Fond du County; T16N, R17E, S03, center of SW) - Heavy rains in late May 2004 may have washed out all nests at the eastern end of the island, where a colony has traditionally occurred. Art Techlow and I found only 1 nest (2 eggs) at the western end of the island on 1 June 2004. In 2003 (2 June), Art Techlow and I counted 5 nests with eggs on a fresh gravel bed that was part of the island's restoration as a colony site in August 2002. We returned to the island on 3 July 2003 and found 2 re-nests with eggs but no young. Heavy rains and hail, and possibly Black-crowned Night-Heron predation may have been factors in the failure of tern nests here.

On 30 May 2002, Techlow and I observed 3 Common Terns in flight near the island but found no tern nests on the island itself. Returning to the island on 26 June 2002, they found no terns present. This was the first time since 1983 that Common Terns had not nested at the island. A year earlier on 8 June 2001, Daryl Christensen and I counted 18 nests with eggs on bare ground; all but 2 nests (found at the island's northwest end) were located in central portions of the island. The colony, however, was washed out by a severe storm that occurred on 11 June 2001. Evidence of waves overrunning the island and flooding the colony site was apparent. No terns attempted to re-nest at or in the vicinity of the island in 2001.

Lake Puckaway (Green Lake County; T15N, R15E, S17) - Common Terns did not nest here in 2004. Daryl Christensen (pers. comm.) observed 3 fledged Common Terns and 5 adult Common Terns on the wing near cattail and phragmites-dominated islands on 22 July 2003. It is highly likely that the adult birds (2-3 pairs) nested on the lake and that young were produced here as well.

Washington Island Reef, Lake Michigan (Door County, T34N, R30E, S27) - No terns nested here in 2004. Tom Erdman (pers. comm.) reported that a colony of 50-100 nested on a reef north of the island in 2003.

Forster's Tern *Sterna forsteri* (endangered)

Due to high water levels and heavy rains in east-central and southeastern Wisconsin during spring, the 2004 breeding season was (with two exceptions) largely a disaster for Forster's Terns. Large-scale nesting failures occurred. Forster's Terns nested at 6 known locations (lakes and federal refuge): Lakes Butte des Morts and Poygan, Lake Puckaway, Rush Lake, Big Muskego Lake, and Horicon Marsh National Wildlife Refuge (NWR). At least 207 nests at 12 subcolonies were documented, but most of these failed (see individual site reports below). No Forster's Terns nested in Green Bay (Tom Erdman, pers. comm.)

In 2003, 1,043 breeding adults occupied 6 colony sites with 18 subcolonies; 439 nests were documented. In 2002, at least 606 breeding adults occupied 7 colony sites. There were 485 breeding adults documented at 4 colony sites in 2001. For the fifth year in a row, no Forster's Terns nested in Green Bay, Wisconsin. The distribution of colonies, number of nesting pairs, and young produced (if known) in 2002 are presented below:

Long Tail Point (Brown County; T25N, R21E, S30, 31) Tom Erdman (pers. comm.) did not observe any nesting terns here in 2004. He observed 5 loafing adults here in a small cattail patch during the first week of June 2003, but he was unaware of any nesting activity. He has not observed nesting here for several years.

Sensiba Marsh (Oconto County; T25N, R20E) - No Forster's Terns bred here in 2004 and 2003, and have been absent since 1997, when Tom Erdman (pers. comm.) reported that 2-3 pairs nested in the marsh.

Duck Creek (Brown County; T23N, R20E, S10) - Tom Erdman (pers. comm.) did not observe any nesting Forster's Terns here in 2004 and 2003; terns have not nested here since 1998, when he observed about 45 nests in cattail stands.

South Oconto Marsh (Oconto County; T28N, R22E, S21). Tom Erdman (pers. comm.) reported no Forster's Terns here in recent years. Terns have not nested here since 1998, when Erdman estimated that 50-60 pairs nested in cattail stands.

Lake Poygan (Winnebago County; natural sites "WW," "W" and "E"; T19N, R14E S01NW, S02NE) - On 15 June 2004, Art Techlow (pers. comm.) documented only 28 nests at the traditional "E" subcolony site and 12 nests at the traditional "W" subcolony site, both part of what is known as the "West Bay Cane Beds." At the time, Techlow commented: "The birds are nesting on floating mats of *Phragmites* and cattail stems. Their situation is extremely precarious. Lake Poygan is -1.5 feet higher than normal for this time of the year. The mats are pulling apart due to the high water. One good storm from the right direction would take the nests out. In addition, the rooted cattail is showing signs of stree from the high water." According to Techlow (pers. comm.), both sites likely failed to produce young this year.

The year 2003 was quite different here. On 2 June 2003, Art Techlow and I counted 160 nests at the traditional "E" cattail/*Phragmites* island site, with nests on cattail mounds, mats, and windrowed *Phragmites*. At the "W" island of hardstem bulrush, river bulrush, cattail, and *Phragmites*, we counted 10 defensive adults but did not find any nests. At the "WW" colony, we counted 77 active nests on windrowed *Phragmites*. The total number of active nests counted: 237. Returning to the colony sites on 3 July 2003, we estimated that approximately 100 young had fledged, with another 75 chicks within 1-2 weeks of fledging, at Colony E. Approximately 50 chicks had fledged at Colony WW, with another 30 within 1-2 weeks of fledging.

On 16 July 2002, Art Techlow and I counted 54 fledged young and 4 pre-fledged young, including several being fed by a total of 29 adults at scattered sites across Boom Bay. A colony of unknown size (perhaps 50 pairs?) most likely nested in the vicinity.

Sand Island #1, (inside) Terrell's Island Breakwall, **Lake Butte des Morts** (Winnebago County; T19N, R15E, S35, NWSE) - On 1 June 2004, Art Techlow and I documented 17 nests on dredge spoil substrate. On 15 June 2004, Techlow returned to the island and found that "some nests were already in the water and the rest are threatened. The rock [riprap] on the west side of the island is under water, and the highest portion of the island is not more than 8 inches above the water. One good storm will completely overtop this island. In addition, much of the surrounding vegetation is dense smartweed, which should be -2-3 feet taller in another month or so." He also observed about 120 adults present--mostly Forsetr's Terns--that he believed may have come from Lake Poygan. Techlow revisited the island on 8 July and found the colony site completely abandoned.

On 2 June 2003, Art Techlow and I observed 3 nests with eggs on a straw hay mat on a dredge spoil island ("Island No. 2") inside the Terrell's Island breakwall. On "Island No. 5," we counted 76 nests on a gravel substrate of the dredge spoil island, also located inside Terrell's Island. Returning on 1 July 2003, we observed that Islands No. 2 and No. 5 had been abandoned, with 70 re-nests evident and egg clutches curiously untouched at Island #5. Only 1 nest had any

evidence of predation, with puncture holes in the eggs evident. *Salix interior* was dominant and dense at Island #5, reaching 2 m in height and may have been a factor in colony abandonment.

On 30 May 2002, Art Techlow and I counted 97 Forster's Tern nests with eggs here. A second visit on 26 June 2002 to band young revealed that 140 nests were re-nests (4 nests w/4 eggs, 48 w/3 eggs, 63 w/2 eggs, 25 w/1 egg), and another 5 nests contained chicks (3 w/1 chick each; 2 w/2 chicks each). It is uncertain what caused the loss of most of the previous first clutches. Returning on 16 July 2002, many nests contained abandoned eggs, and we found only 1 young, previously banded during our 26 June visit. Smartweed growth approached 2 m and may have been a factor in nest abandonment.

In 2001, 124 Forster's Tern nests with eggs occurred on the same island. This is one of a series of recently created artificial islands established for waterfowl and tern production. Over 100 young had fledged at this site by 18 July 2001 (Art Techlow pers. comm.).

Lake Puckaway (Green Lake County; T15N, R15E, S17) - In 2004, Daryl Christensen (pers. comm.) reported the following: "The 100-year flood that raised Lake Puckaway to record levels for more than 45 days pretty much wiped out the [30 artificial nesting] platforms [installed on 3 May 2004] and Pancake Island. The water levels where we placed the platforms was seven feet deep instead of the normal 7 inches. The birds retreated to the flooded marsh to the east and nested on the tops of muskrat huts and fledged few chicks due to raccoon and/or mink predation. By the time the water receded in late July, they did not re-nest."

In contrast, on 3 June 2003, Daryl Christensen and I observed 3 subcolonies of Forster's Terns comprised of 27 nests (21 w/3 eggs, 6 w/2 eggs), 14 nests (12 w/3 eggs, 1 w/2 eggs, 1 w/1 egg), and 4 nests (2 w/3 eggs, 1 w/2 eggs, 1 w/1 egg), respectively, with the two largest subcolonies on artificial nesting platforms, and the smallest in a cattail patch, with substrates a floating board (1 nest) and cattail mats (3 nests). Daryl Chistensen (pers. comm.) obtained an incomplete count of fledglings. He recorded 14 fledglings on 22 July 2003; several adults were still feeding chicks on the platforms and at the cattail subcolony.

Daryl Christensen and I documented 2 colonies, one largely on artificial nesting platforms and the second on windrowed *Phragmites* on 31 May 2002. The mostly platform colony was divided among 4 subcolonies: 6 nests on platforms (4 w/3eggs; 1 w/2eggs; 1 w/1egg); 13 nests on platforms (12 w/3eggs; 1 w/2 eggs); 9 nests on platforms (7 w/3 eggs; 1 w/2 eggs; 1 w/1 egg); and 4 nests on windrowed *Phragmites*. The second colony, located about 300 m east on an island called Pancake Island, comprised of cattail, willow, and *Phragmites,* contained 28 nests (16 w/1 egg; 7 w/2 eggs; 5 w/3 eggs) on windrowed *Phragmites* and cattails. Christensen estimated that at least 70 young fledged in total from both colony sites combined.

On 8 June 2001, 10 artificial nesting platforms each contained a nest with eggs. Approximately 250 m southeast of this platform colony was a colony of 79 nesting pairs with nests on windrowed cattail stalks. It is unknown how many young fledged, but at least 41 fledged young were counted on 4 September 2001.

Rush Lake (Winnebago County; T17N, R14E) - On 20 June 2004, Tom Ziebell (pers. comm.) observed 54 adults and 7 nests on floating cattail islands. He commented: "Heavy rains several weeks before survey. Water level 3 1/2 feet above usual summer water level. Water was at the base of the hill at the East public boat landing. Could not drive from County Highway

M west to public landing, road was under water. Acre size to small clumps of cattail islands floating around the lake. Tops of *Scirpus* only 1-1 1/2 feet above the water. Lots of carp."

In 2003, Tom Ziebell (per. comm.) observed on 14 June 142 adults and 33 nests—on muskrat houses and *Typha* and *Scirpus* rhizomes and residual stems. In 2002, he observed 101 adults and 10 nests on 17 June. He had seen only 20 adults a year earlier on 17 June 2001 and found no nests. In contrast, he reported 39 adults and 2 nests on 17 June 2000, 55 adults and 5 nests on 19 June 1999, and 69 nests and 224 adults here on 19 June 1998.

Big Muskego Lake (Waukesha County; T05N, R20E, S22) – In 2004, breeding Forster's Terns were surveyed by private cooperators John Bielefeldt (pers. comm.) and Terri Peters, and DNR wildlife manager Jim Jackley (pers. comm.). Jackley conducted a cursory survey in early June and noted the following: "At least three subcolonies, with one having at least 20+ nests (probably more), another with at least 10 nests …. Observed several feldglings late July/early August …." Bielefeldt and Peters on three different June dates recorded the following "at separate sub-colonies, counts that may include some non-breeding birds": 39-50 (4 June), 39-52 (17-19 June), and 42-50 (27 June). Bielefeldt and Peters monitored 18 nesting attempts, with nests observed along the edges or interior pools and baylets of cattail stands. Nests were built on muskrat houses (n = 6), live cattail mats (n = 3), small mounds of mud and cattail debris (n = 6), and unrecorded substrates (n = 3). Apparent nest success to hatchling stage without Mayfield or similar corrections was 39% (n = 7) at these nests.

On 1 June 2003, John Bielefeldt (pers. comm..) and Terri Beth Peters observed 85 adults and 3 second-year birds, as well as $\geq$ 19 nests in 4 subcolonies, on the east to southeast edges of the lake, and 40 adults, 4 second-year birds, and 4 nests in 4 subcolonies on the northeast and north-central portions of the lake. The largest subcolony of 54 adults had nests built on algae mats among emergent 4-inch milfoil flowers in otherwise open water. These nests, however, were all lost by 14 June 2003 possibly due to wind/wave/boat action or subsidence of the algae mat. On 23 June 2003, no Forster's Terns were present at the northeast and north-central parts of the lake. Also on 23 June, Bielefeldt and Peters observed 2 pairs copulating among 17 adult Forster's Terns near the "Boxhorn boat launch," but they observed no nests. On 5 July 2003, they observed only 2-4 adult terns; on 13 July 2003 they did not see any Forster's Terns, and on 20 and 26 July, they only observed 1 adult Forster's Tern. Their conclusion: "We suspect that FOTE nesting attempts completely failed at Big Muskego in 2003."

On 29 June 2002, Terri Beth Peters and Jon Bielefeldt (pers. comm.) observed 32-36 adults with 6 nest sites identified and 6-8 potential nests or re-nests as judged by the birds' behavior. No Forster's Tern chicks or fledglings were observed. Isolated or widely scattered cattail was present but recovery of cattail islands after near-complete loss in 2001 was still very sparse. Forster's Terns nested on small amounts of dead cattail stems or very shallow mud banks with floating cattail.

In contrast, on 15 June 2001, I identified 8 subcolonies with a total of 128 incubating adults on windrowed cattail mats. Noticeably absent, however, were cattail islands, evident during 1998-2000. I observed 107 adults at 4 subcolonies in 2000, 70 adults at 4 subcolonies in 1999, and 90 adults at 4 subcolonies in 1998.

Horicon Marsh NWR (Dodge County) - In 2004, biologist Dave Shealer (pers. comm.) documented 83 nests at 5 sites on the refuge: Teal West (40 nests; T13N, R16E, S6-7), Main Pool (36 nests; T13N, R16E, S30), Grand Lake (5 nests; TRS?), Burnett Ditch (1 nest; T12N, R15E, S14), and Potato West (1 nest; T13N, R15E, S12). He estimated that only 33 young

fledged from these sites. His overall assessment of the breeding season: "In general, FOTEs were wiped out everywhere they nested this year [from heavy rains and flooding], with the exception of one impoundment (Teal West), where they did surprisingly well. This was almost certainly because of reduced predation, probably due the high water levels that discouraged herons from foraging there."

Wendy Woyczik (pers. comm.), refuge biologist, reported that 23 Forster's Tern nests occurred at the following locations in 2003: Main Pool East (10), Main Pool West (2), Radke Flowage (10), and Redhead Flowage (1). Shealer (pers. comm.) reported 1 additional nest in 2003: at Teal West. All of these nests failed for unknown reasons.

Former refuge biologist Diane Penttila (pers. comm.) reported late in 2002 that in June 2002 (no specific dates given), "22 nests were found. 18 nests were in the Main Pool, 1 in Redhead, 2 in Radke, and one was off the refuge at Grand Lake (WP 206). Due to time constraints, they (field technicians) were unable to go back to each nest and monitor it for nest success." The cluster of 18 nests and 2 nests are treated as subcolonies for this report. In 2001, Penttila (pers. comm.) reported that in June (no specific dates provided) "52 nests were found, 15 on the Main Pool, 23 in Redhead, and 14 in Teal Pool. It is unknown how many of these nests were renests. Unfortunately, nest success was not determined, but appeared to be poor. Very few chicks were seen during the season."

In 2001 and 2000, Shealer (pers. comm.) reported Teal West had 14 and 13 nests, respectively; Main Pool had 15 and 7 nests, respectively, and in 2001, Redhead Pool had 23 nests.

Caspian Tern *Sterna caspia* (endangered)

In 2004, I received one report of nesting Caspian Terns in Wisconsin. Ken Stromborg (pers. comm.) reported that a large colony of 313 nesting pairs occurred on Gravel Island (Door County, N45.2535708 decimal degrees), with "a large number of young that had hatched successfully." This colony had been reported to him by FWS biologist Jake Ivan.

In 2003, Stromborg (pers. comm.) wrote: “I got to Pirate [Island] twice, but neither time was acceptable for getting a nest count. The first time was so early that all I could find was a couple of starts. When I got back there, eggs had already hatched and many of the young were in the water. My field notes say >45 nests, hundreds of young in the water. So, I would report that the colony was at least as large and successful as in 2002.”

On 13 June 2002, Stromborg (pers. comm.) documented 186 Caspian Tern nests on Pirate Island (T31N, R27E, S10) off the western Door County peninsula, Lake Michigan near Jack Island. About half of the eggs observed had hatched. He found 13 nests here on 21 June 2001. No other Caspian Tern nests were reported in 2003 and 2002. Prior to 2001, the last reported nesting occurred in 1997 at the Kewaunee Harbor Dredge spoil containment site (T23N R25E S17) and at Renard Isle (Kidney Island;T24, R21, S19) in lower Green Bay. Tom Erdman (pers. comm.) observed 154 adults and 4 nests with eggs on 3 June 1997 at Renard Isle, where they also nested in 1988 and 1989. On 18 June 1997, he found 2 new nests with eggs. On 10 July 1997, however, the colony was completely deserted. Several Ring-billed Gulls had apparently been decapitated by Great Horned Owls (GHOW), and it is suspected that GHOW predation was responsible for desertion of the Caspian Tern colony. Erdman (pers. comm.) also reported 2 nests observed in the middle of a Ring-billed Gull (*Larus delawarensis*) colony at the Kewaunee Confined Disposal Facility (T23N, R25E, S17) in 1997.

I observed 15 adults on 11 July 1997 at the Milwaukee U.S. Coast Guard Impoundment (Milwaukee Harbor) (T06N, R22E, S04 and S09) but found no evidence of nesting; 6 pairs nested here in 1990.

Summering individuals continue to occur regularly along the Wisconsin shores of Lakes Superior and Michigan.

Barn-Owl *Tyto alba pratincola* (endangered)

There were no reports of nesting barn owls in the state in 2004, but I received 5 calls of suspected but uncertain barn owl sightings. There were, however, two confirmed Barn Owl sightings during the reporting period—both in September 2003. The first occurred at Tower Hill State Park in Iowa County (T08N, R3E, S29 NW1/4) on 11 September. A lone bird was observed by Alice Van Zoeren (pers. comm..) "in the top of the shot tower… When we reached the top of the trail it flew out of the tower through the window and perched for a few minutes in a large tree next to the tower before flying out of sight." The second sighting was of a pair, likely fledged young, "perched high atop a tree … calling back and forth," reported Edward Voet on 23 September.

There was 1 confirmed Barn Owl sighting in 2002, but no reported nesting. During the first to third week of February, Wayne Thatcher (pers. comm.) observed a barn owl near the peak of his barn, west of Oregon. He did not observe the bird again.

The last confirmed nesting occurred in 1999. On 18 August 1999, DNR warden Charles Horn contacted DNR warden Dennis Kirschbaum about an injured barn owl he had just picked up at a farm near Homer in northern Grant County; the bird died that night. On 21 August 1999, Horn and Kirschbum met ornithologist Fred Lesher at a farmstead near Boscobel in Grant County (T07N R02W S10, NE SW) to check out a report of owls in the attic. One barn owl young, a pre-fledgling, was observed in the attic along with pellets, feathers, and whitewash. Another owl was observed in a sugar maple outside the main farmhouse.

On 20 October 1999, I visited the site with Horn and Kirschbaum and found an abandoned clutch of eggs in the attic; the first evidence since 1929 in the state of a second barn owl clutch during the same breeding season.

DNR wildlife manager Kris Belling (pers. comm.) reported a barn owl sighting on 19 March 2000. The site was a pole shed east of Olivet, Pierce County, T27N, R15W, S32, NE1/4. This bird may have been trapped in the shed. In addition, a road-killed Barn Owl was found on 4 April 2000 at T27N R18W S3 (K. Belling pers. comm.).

Loggerhead Shrike *Lanius ludovicianus* (endangered)

I received one report of a single Loggerhead Shrike in 2004. On 28 May 2004, DNR wildlife manager Kris Belling observed a lone bird on a powerline located at T29N, R18W, S27. She searched potential nesting habitat in the area but did not observe the bird again.

I did not receive any reports of shrikes in 2003.

On 26 July 2002, Mark Palas (pers. comm.) observed 3 shrikes at the intersection of 150th Street and 100 Ave. about 6 km northeast of Roberts in St. Croix County. This is generally near

an area where shrikes have nested in previous years. He recorded GPS coordinates as follows: $45^0$00.422, W$92^0$29.814. Palas believes that the shrikes probably nested in the area.

There were, however, no confirmed reports of breeding shrikes received by our office in 2003, nor in 2001 and 2002, although shrikes likely nested at or near traditional sites in St. Croix County. In 2000, a total of 3 active nests were documented. The first was reported on 27 June near Belleville in Montrose township (T04N, R08E, S16 SE) in Dane County. The nest was located in a pine amid a "line of about 8-10-foot pines that line the north edge" of a private residence (Michael Madell pers. comm.). There was no information on clutch size or production.

A nest site reported active during 1998-2000 at a Hudson subdivision in St. Croix County (T29N, R19W, S20, NE1/4) was likely active in 2001 but not surveyed.

Belling also reported a 2000 nest at a site between Roberts and Hudson in St. Croix County. The nest occurred in a red cedar "about 8 feet tall and 7 feet wide. The nest was about 3 feet high in the tree. The tree was in a grassy area just outside the mowed yard of a house in a relatively new subdivision. There were 7 eggs, all of which hatched by 19 May." All 7 young were banded with U.S. Fish and Wildlife Service aluminum bands

In 1999, there were 4 nests reported. A second 1999 nest occurred approximately .8 km east of the Hudson subdivision site described above, with the nest occurring in a white spruce within a residential front yard (T29N, R19W, S21, NW1/4). The landowner stated that shrikes had nested here for the past several years. Belling reported that at least 3 young fledged, with 1 unhatched egg found in the nest. The nest tree was approximately 12 feet high and 5 feet wide, with the nest occurring about 4 feet above the ground.

Tom Erdman (pers. comm.) reported that a 1999 shrike nest occurred in a blue spruce at a residence in Oconto County; 2 young fledged. Erdman also reported another shrike nest in a hedgerow in open agricultural land about 2 km north of the Kewaunee/Door County line.

MISCELLANEOUS REPORTS

American White Pelican *Pelecanus erythrorhynchoss* (special concern)

American White Pelicans have increased markedly in the State of Wisconsin during the past decade. There are now two distinct breeding populations: one in Lower Green Bay and one at Horicon Marsh National Wildlife Refuge. Approximately 400-500 pairs nested at the Horicon National Refuge in May, but when I conducted a pelican nesting survey on 1 June 2004 with refuge biologist Wendy Wychek and refuge technician Jon Kruppel, we found that several subcolony sites were submerged. Only two sites of 8 sites found in 2003 were above water, with 3 incubating adults observed at one site, and 18 adults observed at the second site. We counted only 18 pelican chicks at both sites combined. Apparently hundreds of breeding adults relocated to lower Green Bay because Tom Erdman (pers.comm.) reported an influx of pelicans in early to mid-June at Lone Tree and Cat islands. He reported that a total of 700-750 young fledged from these colonies in lower Green Bay.

In 2003, a total of 907 nests were counted on the ground. Site summaries follow.

Cat Island (Brown County; T24N, R21E, S07) - For the eleventh consecutive year, American White Pelicans nested on Cat Island in lower Green Bay. Tom Erdman (pers. comm.) documented 334 ground nests on 16 June 2004, including presumed late-nesting birds from

Horicon. He estimated that about 350 young fledged. In 2003, Erdman (pers. comm.) reported 170-185 ground nests. There were 185-220 nests estimated in 2002, but only about 200 pelicans fledged (Tom Erman pers. comm.) No details were submitted also for the years 2000-2001. In 1999, there were 180 nests on the island, and 230 young produced (Tom Erdman pers. comm.).

Lone Tree Island (Brown County; T24, R21, S18) – On 16 June 2004, Tom Erdman (pers. comm.) documented 314 ground nest, and "these were presumed to be from Horicon." He estimated that 360-380 young fledged from Lone Tree. In 2003, he counted >200 pelican nests on bare ground.

Hat Island (Door County; T30N, R26E, S2) - White pelicans nested here for the first time in 2001 but did not return during 2002-2004 (Tom Erdman pers. comm., Ken Stomborg pers. comm.). Ken Stromborg observed 3 nests on 21 June 2001. Two of these nests contained 3 live chicks each; 1 had 2 live young.

Horicon Marsh NWR (Dodge County) - For the sixth consecutive year, pelicans nested at the Horicon NWR. Severe spring floods, however, almost eliminated all nesting attempts and several hundred breeding pairs abandoned the refuge. Refuge biologists estimated that 400-500 pairs attempted to nest here during April-May 2004 (Jon Kruppel, pers. comm.). A 1 June 2004 survey revealed that 6 of 8 former subcolony sites were under water, with only 21 adults and 17 young remaining at two sites.

On 2 June 2003, Wychek, Kruppel, DNR biologist Art Techlow, and I documented 522 nests at 8 subcolonies. Each of these subcolonies occurred on dredge spoil islands, with all but two (broad-leaved cattail stands) dominated by *Salix interior.* No attempt was made to document production. At the cattail-dominated sites, the pelicans had flattened the *Typha* along edges of the islands and laid eggs on top of the resultant mats.

In 2002, pelicans nested on 7 islands within the refuge, along the Main Ditch, "just shy of W88^0, 42'00", and ranged from north to south, from N43^0, 33'30" to N43^0, 32'45" (Dianne Penttila pers. comm.). Penttila estimated the pelican population to be 1,000-1,400 adults (including breeders and nonbreeders), with at least 340 young produced. In 1999, pelican nests (13) were first documented at Horicon Marsh (Tom Erdman, pers. comm.).

Snowy Egret *Egretta thula* (endangered)

Snowy Egrets did not nest on Cat Island, lower Green Bay, in 2004 and 2003, and we did not receive any other reports of nesting birds. Tom Erdman (pers. obs.) observed 5 adults in late July 2003 in Green Bay. No Snowy Egrets occurred on Cat Island, Green Bay, in 2002, nor during 1999-2001 (Tom Erdman pers. comm.). In 1998, Erdman observed 2 adults here, but didn't find a nest.

JOB 215.3: DETERMINATION OF MONITORING SYSTEMS

No monies were allocated to this job during the reporting period.

JOB 215.4: HABITAT MANAGEMENT FOR FORSTER'S TERN AND BARN OWL

Objective

Provide secure nesting sites for Forster's Tern and Barn Owls through the installation of artificial nest structures or habitat management.

Findings

Forster's Tern

Volunteer Daryl Christensen, ER biologist Randle Jurewicz, and I installed 30 artificial nesting platforms in two groups of 19 and 11, respectively, within *Phragmites* and *Typha* beds on east-central Lake Puckaway on 3 May 2004. Marsh hay was used for nesting material. All platforms were anchored individually with cement blocks or bricks tethered by 3/8-inch nylon rope approximately 8 feet long. Subsequent surveys revealed that all platforms were used by nesting terns but high water wiped out nesting attempts later in spring.

An herbicide was used sparingly at 2 artificial island sites to improve nesting habitat conditions for Forster's and Common Terns during spring 2003 on Lake Butte des Morts.

No nesting platforms were installed in Green Bay, on Big Muskego Lake, nor on Lake Poygan during the reporting period.

JOB 215.5: HABITAT MANAGEMENT FOR COMMON TERN AND PIPING PLOVER

Objective

Provide secure colony sites for the Common Tern and nesting habit for Piping Plover.

Findings

Common Tern

From August to October 2002, the Ashland Tern Island was re-built, funded by grants from the Environmental Protection Agency and the Wisconsin Bird Conservation Initiative. The newly rebuilt island—30 x 10 m in size and standing 2 m above water—is made of steel and oak, with 1 m-wide flashing installed around the perimeter of the island to deter mink from entering the site. Concrete and rock filled the interior of the island, with a sand blanket poured on top. In spring 2003, 91 pairs nested on the island. The island has been engineered to last at least 50 years and to withstand a 100-year flood event. In 2004, 99 pairs of Common Terns nested on the island, but despite the deterrent of metal flashing heavy mink predation occurred during the early morning hours on 3 July. Modifications to the site are planned before the '05 nesting season.

Ring-billed Gull control (removal of nests and nest contents during weekly visits) occurred where terns nested at Interstate Island in the Duluth-Superior Harbor. The installation of a string grid over about an acre was successful in deterring Ring-bills from occupying tern nesting areas.

An herbicide was used sparingly at 2 artificial island sites to improve nesting habitat conditions for Forster's and Common Terns during spring 2002 on Lake Butte des Morts.

Piping Plover

No management occurred in 2004 due to the failure of a pair to nest.

JOB 215.6: BALD EAGLE SURVEY AND MANAGEMENT

Bald Eagle *Haliaeetus leucocephalus* (formerly threatened)

Pat Manthey (pers, comm.) reported that "'complete breeding surveys were conducted statewide in 2004 by DNR Wildlife Management and Endangered Resources staff. Early spring aerial surveys were used to locate occupied territories. In later spring a second aerial survey was conducted to count young in each nest. Preliminary data indicate that Wisconsin's Bald Eagle nesting population growth continues at a modest rate. The total nesting population is expected to approach 900 pairs, up from 880 in 2003. The northeast part of the state saw a significant increase. The northwest also saw a modest increase, continuing the reversal of the declines of several years ago.

"The Wisconsin DNR Eagle Committee and Wildlife Managers provided the booklet *Bald Eagles in Wisconsin - A Management Guide for Landowners* and also offered on-site guidance to landowners to help them ensure success of eagles on their land.

"The Bureaus of Endangered Resources and Wildlife facilitate and coordinate rescue and treatment of injured eagles and monitor all causes of injury and death. Dead eagles are sent to DNR Wildlife Health for necropsy. Feathers and carcasses are then sent to the National Repository.

"Four eaglets were taken from northern Wisconsin nests and sent to a hack site on the Hudson River in New York State. Health exams were done at The Raptor Center at the University of Minnesota. Blood samples taken shortly after the young were removed from the nest were tested and found negative for exposure to West Nile Virus.

"An unexplained illness continues to occur in the wintering Bald Eagle population on the Lower Wisconsin River. A task force has been formed from staff from DNR Bureaus of Wildlife, Endangered Resources, and Law Enforcement; the US Fish and Wildlife Service; US Department of Agriculture (APHIS); US Geological Survey (Law Enforcement and Wildlife Health Laboratory); local veterinarians; wildlife rehabilitators; and a local eagle research Group (Ferry Bluff Eagle Council). Sick and dead eagles are promptly retrieved, treated, and necropsied or released as appropriate.

"Late in the summer, an eagle from Vernon County died from West Nile virus, documented at the University of Minnesota Raptor Center where the bird had been sent when it was found ill."

The Bald Eagle was removed from the Wisconsin Endangered and Threatened Species List in August 1997.

JOB 215.7: OSPREY SURVEY AND MANAGEMENT

Osprey *Pandion haliaetus* (threatened)

Pat Manthey (pers. comm..) reported that “statewide Osprey aerial nesting surveys were conducted by DNR Wildlife and Endangered Resources staff in 2004. The occupancy flights were done in late spring to locate nests, followed by productivity flights in midsummer to count young. We saw modest increases in nesting populations in the northwest and northeast parts of Wisconsin. Preliminary data indicate the population is near the recent average of 375 - 400 nesting pairs in the state.

"Over 80% of Wisconsin’s Ospreys build their nests on artificial structures, the remainder on natural snags and trees. Most nests are on artificial platforms that have been placed on poles or treetops, but nests have also been found on a variety of other manmade structures not intended for Osprey use. The birds are utilizing cell phone towers, an increasing number of ball field lights, a wind generator, an unused piece of large construction equipment, and numerous power poles. There is one nest on a large rock out in a lake. An Osprey pole fell down at one site, so the Osprey nested on the tiny island – two feet from an active loon nest!

"Nests on power poles can pose hazards. The birds can get electrocuted or burned. Power lines can be damaged and power outages occur. Wildlife staff continued to work with power companies to place nesting platforms on new poles near power pole nests and to discourage the birds from nesting on the power poles. DNR staff also assisted landowners in efforts to provide more appropriate and safe nest site locations. The number of platforms available for Osprey use has declined, due to competition from eagles and lack of DNR resources for maintenance and replacement of existing platforms, and for placement of new platforms. Some modest funding may be available for platform maintenance this winter.

"Wisconsin entered the ninth year of the Osprey translocation project. Nineteen chicks were taken from nests in northern Wisconsin and sent to hack sites in Iowa with a goal of expanding the Midwest Osprey population. The birds were taken from nests with multiple young; one healthy young is always left in the nest. These chicks were given health exams at The Raptor Center at the University of Minnesota. All but one were found perfectly healthy before shipment to their destinations. One chick was found to have a minor fracture. It went to a rehabilitation center and was later released at the hack site. As evidence of the success of the project, Iowa had their second year of Osprey nesting this year.

"For the first time, we found evidence of predation by Great Horned Owls at nests we visited for the translocation project. At one nest where we had counted two chicks the week before, we found only an owl feather and pellet. A second nest that had held 3 chicks had only two headless young."

At Big Muskego Lake, cooperator William Stout (pers. comm.) reported that a pair of Ospreys was observed at a nesting platform regularly during spring 2004. A 1 July 2004 visit to the site indicated that a nesting attempt had occurred, but heavy spring rains apparently contributed to a nesting failure. In 2003, 3 adult Ospreys were present in the area, with a nest constructed but apparently not used. A female Osprey ("Ethel") was hacked at the lake in 2002 and had a satellite radio transmitter attached; this bird migrated in fall to Panama where she remained until 15 April 2004, when she began a northward migration. Ethel eventually returned to the Midwest but to the Twin Cities area.

JOB 215.8: NEOTROPICAL MIGRANT LANDBIRD CONSERVATION

The national initiative known as *Partners In Flight*, organized to promote and implement neotropical migrant bird conservation, has evolved in Wisconsin into the Wisconsin Bird Conservation Initiative (WBCI). WBCI aims to integrate game and nongame bird conservation in Wisconsin, including the development of specific projects benefiting neotropical migrant birds. Partners In Flight interests are well represented by WBCI. Several WBCI committees and subcommittees have been formed to focus on projects by habitat groupings and ecological regions. A summary of WBCI accomplishments during 2003-2004, provided by WBCI Director Andy Paulios, is presented below.

WBCI Accomplishments for 2003-2004

"The Wisconsin Bird Conservation Initiative (WBCI) is well on its way to meeting the goals and objectives outlined within the charter document located at www.wisconsinbirds.org. WBCI represents a unique cooperative partnership of over 120 endorsing members aimed at delivering the full spectrum of bird conservation emphasizing voluntary stewardship. Recent events and accomplishments are highlighted below:

- WBCI helped to fund a number of important bird conservation projects, including the rebuilding of a Common Tern nesting colony, Common Tern nest monitoring, continuation of a 30 year Bald Eagle/Osprey survey, and Trumpeter Swan recovery monitoring. All of these projects were geared at high priority species for our conservation regions.
- WBCI is currently developing an all-bird conservation and implementation plan that will guide bird conservation decisions and management across the entire WBCI partnership.
- WBCI is also developing a coordinated bird monitoring plan that will help address the effectiveness of habitat implementation as well as recommend and implement additional long-term monitoring priorities as needed.
- The Urban Habitat Subcommittee is working with the WIDNR and National Audubon on a Bird City, WI program. The initial idea was to take the Tree City USA program and expand it to birds. To our knowledge this has not been done comprehensively anywhere else in the country.
- The Important Bird Areas (IBA) program is moving full-steam ahead in nominating and designating sites across the state as IBAs. Currently over 70 sites have been nominated as IBAs with more to come. These IBAs are being integrated into WBCI's all-bird planning.

- The WBCI Issues Committee organized a successful Gull Management Meeting on March 11, 2004 in Milwaukee. The purpose of this meeting was to offer the full spectrum of information on gull biology/ecology, human health issues, management techniques and planning, etc. Participants came out of the meeting with a clear understanding of how to plan for gulls in their communities.
- The Great Wisconsin Birding and Nature Trail had its grand opening on May 20, 2004 at the Crex Meadows Wildlife Area in Grantsburg, Wisconsin. Hundreds of birders attended."

Revisions to a neotropical bird conservation plan for Partners In Flight Bird Conservation Region 12, formerly Physiographic Area 20 (northern Wisconsin, northeastern Minnesota, and northern Michigan) occurred during the reporting period.

Continuing efforts to educate and inform the general public about neotropical bird conservation, research, and management occurred during the reporting period, including bird walks and lectures on International Migratory Bird Day. And *A Checklist of Wisconsin Birds* was developed for the Great Wisconsin Birding and Nature Trail by Sumner Matteson, Susan Foote-Martin, and Tim Cooke. This *Checklist* may be obtained by contacting the DNR's Bureau of Endangered Resources at 608-266-0545 or Bureau.EndangeredResources@dnr.state.wi.us.

JOB 215.9: FOREST RAPTOR CONSERVATION AND MANAGEMENT

Management guidance for the Northern Goshawk and Red-shouldered Hawks occurred on a case-by-case basis at individual sites in 2004. Project biologist James Woodford (pers. comm.) provided the following report on monitoring activities:

Northern Goshawk

"We monitored 45 historic or reported goshawk territories in 2004…. Because of reduced funding, staff were only able to visit some of the territories once during the nesting season. However, by combining our Goshawk Monitoring work with the Bioregional Monitoring pilot project, we were able to survey more efficiently and meet most of the requirements of our monitoring protocol. Overall, we found 16 active nests and two additional occupied territories within eight different counties in northern Wisconsin…. Yellow birch (Betula lutea; 38%) and aspen (Populus tremuloides; 31%) were the most common tree species used for nesting. The mean diameter breast height (dbh) for active nests was 47 cm [19 inches; range: 29-82cm, (11-33 inches)], and the total number of nest structures per territory ranged from one to five."

Red-shouldered Hawk

"Because of reduced funding for Forest Raptor project in 2004, we did not visit any historic sites. I believe the site on State land near Spring Green was the only historic territory visited this year. We ([WDNR]/Menominee Indian Tribe) were able to continue the Red-shouldered Hawk study on the Menominee Indian Reservation. For this project we visited 33 historic or new nest trees. Eighteen had territorial birds present, with evidence of a nest attempt at 15 sites. Only 3 (20%) nest attempts were successful."

The Department's Forest Raptor Working Group (FRWG) met in September 2003 in Wausau, Wisconsin, to review progress and accomplishments during 2003. The FRWG includes personnel from the DNR Bureaus of Integrated Science Services, Endangered Resources, Wildlife Management, and Forestry. Here are excerpts from the FRWG's report "Summary" for the period 1 July 2002-30 June 2003:

"… we continued to distribute information materials and sponsored two training workshops. The workshops were attended by 30 field staff from DNR, US Forest Service, County Forest Departments, Menominee Tribal Enterprises, and other agencies. In addition, field identification cards for seven raptor species were printed and distributed to field offices and staff. In cooperation with the DNR's Aquatic and Terrestrial Resources Inventory (ATRI) program, we developed an Internet site that includes a field guide, vocalizations, and an electronic reporting form for observations.

"We checked 45 historic or reported goshawk territories in 2003. Overall, [Northern] Goshawk nest success was very good (87%) and productivity was near normal. We found 15 territories with active nests that produced 25 young [and] … productivity results of 1.79 young/active nest and 2.08 young/successful nest…. For the past two years staff have worked with land managers to develop site-specific management recommendations at seven Goshawk nest stands with nearby timber harvest activities. We have developed an experimental design that should allow for the evaluation of the effectiveness of these recommendations in future years. Also, we began monitoring Red-shouldered Hawk nests at two locations in 2003. With the addition of these two local populations, DNR and cooperators are monitoring Red-shouldered Hawks at five areas throughout Wisconsin."

JOB 215.10: WETLAND BIRD CONSERVATION AND MANAGEMENT

Surveys of selected threatened and endangered wetland birds (Red-necked Grebe, Great Egret, Forster's Tern) continued in 2004.

Implementation of the Wisconsin Bird Conservation Initiative, inaugurated in May 2001, will promote wetland bird conservation and management through projects that benefit both game and nongame species. One WBCI project planned during the reporting period involved shorebird monitoring, but unfortunately the Western Shorebird Survey, which housed the Wisconsin website, experienced technical difficulties during the reporting period and a decision was made to move the site from Utah to Wisconsin, where we hope to find an appropriate home for it prior to the 2005 spring migration.

JOB 215.11: WHOOPING CRANE CONSERVATION AND MANAGEMENT

The Necedah/Central Sands area of the state of Wisconsin was selected in 1998 by the federal Whooping Crane recovery team as a site to introduce and establish a second continental Whooping Crane migratory and breeding population of least 25 breeding and migratory pairs. The draft federal rule to establish a nonessential, experimental population of Whooping Cranes in 20 eastern states was published on 9 March 2001. A chronology of events is presented below beginning with the year 2000 field season.

Preliminary work with 11 Sandhill Cranes involving imprinting on an ultralight aircraft and leading these cranes to a wintering area along the northwestern coast of Florida (Chassahowitzka NWR) was successfully accomplished in 40 days by 10 of the birds in 2000. Operation Migration (OM), a private Canadian conservation organization, flew the birds south. Nine of the 10 birds returned to the release area during the spring of 2001. The flock was first sighted on 27 April 2001 at the Necedah National Wildlife Refuge, at the same site where they had fledged the previous fall.

In 2001, 10 Whooping Crane chicks hatched at the Patuxent Wildlife Research Center were raised at the Necedah National Wildlife Refuge (NWR). The cranes practiced flying behind ultralight planes during early morning hours when weather permitted. Eight of the 10 birds migrated south following OM's aircraft, but 1 was killed when a storm caused it to fly into a power line and 2 were lost to bobcat predation on their Florida wintering site. Five whoopers successfully migrated back to Wisconsin in April 2002; 4 spent the summer predominantly at Necedah NWR, and 1 chose to summer at Horicon NWR. The 5 birds have also used numerous wetlands on state wildlife areas.

In 2002, 17 Patuxent Whoopers, raised in pens at Necedah, followed a similar regimen as the 2001 cohort. Sixteen of these birds completed a round-trip migration. U.S. Fish and Wildlife Service Whooping Crane coordinator Tom Stehn (pers. comm.) provided the following update for April-September 2003.

"HIGHLIGHTS"

"An excellent nesting season in Canada raised expectations for a record number of whooping cranes to arrive at Aransas in the fall, 2003. In mid-August, a record 61 nests had fledged 28 chicks.

"The central Florida whooping crane flock responded favorably to increased water levels and set records in 2003 for the most nests (8) and most fledged chicks produced (3). The pair that successfully fledged the first whooping crane chick (Lucky) in 2002, also were successful parents in 2003, raising Lucky II. Survival of the 13 juveniles released in the 2002-03 winter was excellent, with only one mortality from a power line strike.

"All 21 whooping cranes in the eastern migratory population left Florida on their own in the spring of 2003. All but one survived the summer. An additional 16 juveniles are well along in flight training and should leave on their first ultralight migration in October.

"Captive whooping crane facilities had an excellent production season with 41 chicks fledged. Total whooping crane numbers in September, both captive (134) and wild (318), totaled 452…."

"All 21 whooping cranes (5 subadult whooping cranes from 2001 and 16 juveniles from 2002) in the eastern migratory whooping crane population headed back entirely on their own to Wisconsin from west central Florida in the spring, 2003. All returned to central Wisconsin except for 1 female that stopped short in northern Illinois where she summered, and a second female that got off track in northern Georgia and migrated well west of the migration routes used by the other cranes. It was noteworthy that the latter bird had been trucked through a large portion of Georgia during her first fall migration which may have interfered with her staying on the return route. On May 3, project personnel in costume approached this off-course bird in southeastern Ohio and easily captured her and returned her to central Wisconsin. One female after returning to Wisconsin crossed the border into southeastern Minnesota where she spent most of the summer. Three females after returning to Wisconsin strayed to the northwest and were reported 6 miles across the border of South Dakota in Deuel County. As per written agreement, South Dakota was quickly notified and decisions made jointly on how to handle the cranes. After the Central Flyway Council requested the birds be captured and returned to Wisconsin, and after the roost pond of the 3 cranes dried up and they moved 60 miles further west, a joint decision was reached to capture the 3 females. A capture was completed with some difficulty, and the most feisty of the 3 cranes developed capture myopathy and subsequently died after days of intensive therapy at Necedah NWR. This loss was unfortunate,

but the capture of the whooping cranes was driven by the desire of the central Flyway Council and by the section of the Endangered Species Act that does not want mixing of endangered and experimental nonessential populations of a species, even if the birds are color-banded and their origin known. One of the whooping cranes from 2001 spent her second summer at Horicon NWR east of the release site at Necedah. It is noteworthy that all the straying whooping cranes were females (1 in Illinois, 1 at Horicon, 3 in South Dakota). This was anticipated, with better homing by males anticipated back to the release site at Necedah.

"WCEP [Whooping Crane Eastern Partnership] continued operations for reintroductions in 2003 that included project planning, fund raising, hatching and training chicks at Patuxent, health checks and flight training at Necedah NWR. This year, 2 of the eggs for the ultralight project were produced and flown in to Patuxent from the San Antonio Zoo, and 1 egg came from the International Crane Foundation. [Seventeen] cranes were flown from Patuxent to Necedah aboard a Windway Corporation aircraft, 10 young whoopers on June 19th, and 7 on July 1st. One crane pulled from the ultralight cohort at Patuxent because of health problems later tested positive for infectious bursal disease, the disease that caused excessive mortality in all 2001-02 releases in central Florida. Ultralight training proceeded ahead of schedule throughout the spring and summer, with project veterinary staff dealing with some minor ailments. One crane collided with the ultralight and had to be euthanized. Partnership planning meetings were held in Wisconsin September 18-19, 2003."

"WHOOPING CRANE NUMBERS / September 12, 2003"

Wild Populations

	Adult	Young	Total
Aransas/Wood Buffalo NP	167	28	195*
Rocky Mountains	0	0	0
Florida non-migratory	84	3	87**
Wisconsin/Florida migratory	20	16	36
Subtotal in the Wild	271	47	318

***** "This number is the anticipated number that will arrive at Aransas in fall, 2003. It is based on average adult mortality between spring and fall, and the 28 chicks seen by CWS biologists in August, 2003. Note the official size of the population is still 184 as of spring, 2003."

****** "This number is an estimate since not all whooping cranes in Florida can be found on a regular basis."

Captive Populations

	Adult	Young	Total	Breeding Pairs
Patuxent WRC, Maryland	49	11	60	10
International Crane Foundation, WI	26	10*	36	10
Devonian Wildl, Cons.Cent/Calgary	17	2*	19	6
ACRES, New Orleans	8	0	8	0
New Orleans Zoo	2	0	2	0
San Antonio Zoo, Texas	6	0	6	2
Lowery Park Zoo, Tampa, Florida	3	0	3	0
Subtotal in Captivity	111	23	134	28

*"ICF and the San Antonio Zoo both produced eggs that were transported to Patuxent and are listed as young at Patuxent."

"TOTALS (Wild + Captive) 318 + 134 = 452"

In 2004, DNR Whooping Crane Coordinator Beth Goodman provided the following summary: "16 whoopers were added to the Wisconsin migratory population in Fall '03. All 16 youngsters successfully overwintered in Florida wetlands, as did 20 birds from the previous 2 years' releases. All 36 whooping cranes successfully completed their 2004 spring migration north on their own. We continue to see frequent use of wetlands on state, private and federal lands throughout the Wisconsin. Presently 14 young whooping cranes are preparing for their first migration south behind ultralights; target departure date is October 9th, 2004. If all whoopers successfully migrate and return to WI next spring, the population will be at 49 birds – possibly 50, if [one] younster with flight feather problems is able to rejoin the fall cohort. Our project goal is to have 25 breeding birds and 125 individuals in the population by 2020. 2005 might be the first year for nest building activities; the public continues to provide nothing but positive feedback and enthusiasm for this effort."

Project updates and information are available at: http://www.operationmigration.org (Operation Migration's web site; see: *In the Field*); http://www.bringbackthecrane.org (the Whooping Crane Eastern Partnership web site); and http://www.savingcranes.org (the International Crane Foundation web site).

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